REMARKS

Claim 1 has been amended. New claims 8 to 11 have been added. Claims 1 to 11 are now pending. No new matter has been added.

Applicants respectfully request reconsideration of the present application in view of this response.

Claims 1 to 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,778,987 to Saaski et al. (the "Saaski reference") in view of U.S. Patent No. 5,315,129 to Forrest et al. (the "Forrest reference").

The Saaski reference appears to concern an optical measuring device using a spectral modulation sensor having an optically resonant structure. The Saaski reference further refers to physical changes induced in the spectral modulation sensor's optically resonant structure by the physical parameter being measured cause microshifts of its reflectivity and transmission curves, and of the selected operating segment(s) thereof being used, as a function of the physical parameter being measured. The operating segments have a maximum length and a maximum microshift of less than about one resonance cycle in length for unambiguous output from the sensor.

The secondary Forrest reference appears to concern organic optoelectronic devices such as a modulator and a photodetector having alternating layers of two crystalline planar organic aromatic semiconductors. The Forrest reference refers to using 3,4,9,10-perylenetetracarboxylic dianhydride (PTCDA) and 3,4,7,8-naphthalenetetracarboxylic dianhydride (NTCDA). The Forrest reference further refers to employing a chamber containing an inorganic substrate with appropriate material for making electrical contact to the organic structures and sources of PTCDA and NTCDA, the chamber being maintained at a pressure which is generally less than 10^6 Torr. The Forrest reference refers to the substrate being held below 150K while the PTCDA and the NTCDA are alternately heated.

In contrast to both the Saaski and Forrest references, amended claim 1 is directed to a scale for technical devices and requires a plurality of one of crystalline and amorphous first material layers having a first thickness and a plurality of one of crystalline and amorphous second material layers, the first material layers being different from the second material layers so that the second material layers are readily distinguishable from the first material layers when imaged using one of high-resolution and ultrahigh-resolution imaging methods,, the second material layers having a second thickness and the first material layers alternating with the second material layers. The Saaski reference does not teach or suggest a plurality of

one of crystalline and amorphous first material layers and a plurality of one of crystalline and amorphous second material layers which are distinguishable from the first material layers when imaged using high-resolution or ultrahigh-resolution imaging methods, the second material layers having a second thickness and the first material layers alternating with the second material layers. Instead, the Saaski reference appears to teach that a light source, a light transmission means, a spectral modulation sensor having an optically resonant structure and detection means for converting the output light from the spectral modulation sensor into electrical signals – and adds a light absorbing and/or reflecting coating to the outer surface of an etch stripped layer which forms the covers for the cavities. Further, the Saaski reference refers the light absorbing and/or reflecting coating being used to prevent external light from entering optically resonant structure 21A though its cover 28 and to prevent light transmitted through the optically resonant structure 21A into the cover 28 from reentering the optically resonant structure 21A from the cover 28.

The secondary Forrest reference cannot cure the deficiencies of the Saaski reference, meaning both the Forrest and Saaski references together do not teach or suggest all of the features of claim 1.

Among other things, the Forrest reference does not appear to teach or suggest a plurality of one of crystalline and amorphous first material layers and a plurality of one of crystalline and amorphous second material layers, the first material layers being different from the second material layers so that the second material layers are readily distinguishable from the first material layers when imaged using one of high-resolution and ultrahigh-resolution imaging methods. Instead, the Forrest reference refers to using only stable, crystalline, aromatic dye compounds, one of the two compounds conducting holes, while the other conducts electrons.

Accordingly, the Saaski and Forrest references, alone or in combination, do not render obvious claim 1 under 35 U.S.C. § 103(a).

Since claims 2 to 5 depend, directly or indirectly from claim 1, claims 2 to 5 are allowable for at least the same reasons as claim 1. Moreover, in addition, the dependent claims recite additional features not necessarily embodied in the combination of the references. For example, claim 3 recites that both the first and second material layers have a thickness of fewer than ten nanometers – which is in direct contrast to the Forrest reference which teaches a preferred thickness of its layer of at least 10 nanometers.

Claim 6 and its dependent claim 7 contain some analogous features to claim 1 and are therefore allowable for essentially the same reasons as claim 1. Claims 6 and 7 further

include additional features, inter alia, that both the first and second material layers have a thickness of fewer than ten nanometers – which is in direct contrast to the cited references (see, for example, the Forrest reference which teaches a thickness of its layer of at least 10 nanometers).

New claims 8 to 11 require a plurality of crystalline first material layers having a first thickness; and a plurality of amorphous second material layers which are distinguishable from the first material layers when imaged using one of high-resolution and ultrahigh-resolution imaging methods, the second material layers having a second thickness and the first material layers alternating with the second material layers, at least one of the first and second material layers having a thickness of less than twenty-five nanometers, wherein the first material layers have a different composition than the second material layers. Neither the Saaski nor the Forrest references (alone or in combination) teach or suggest the alternating layers of amorphous and crystalline material layers in the manner described in claims 8 to 11. Accordingly, Applicants respectfully submit that claims 8 to 11 are allowable.

To reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim element and it must also provide a motivation or suggestion for combining the elements in the manner contemplated by the claim.

The Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept" — which is not even the case here, there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person of ordinary skill in the art and having no knowledge of the claimed subject matter to "make the combination in the manner claimed," stating that:

> In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to *the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed.* In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.